NOTE.—*The application for a Patent has become void.*
This print shows the Specification as it became open to public inspection.

PATENT SPECIFICATION

Convention Date (India): March 19, 1921. **177,176**
Application Date (in United Kingdom): March 17, 1922. No. 7890/22.
Complete not Accepted.

COMPLETE SPECIFICATION.

Improvements in or relating to Electromagnetic Locks.

I, VICTOR GEORGE MURRAY, of 23, Mazagon Terrace, Nesbit Road, Mazagon, Bombay, India, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in locks which are opened by electro-magnetic means. The invention can be used wherever an automatically closing lock can be employed, and be applied as for instance in the case of locks used on doors of railway vehicles. The invention may be fitted to any door or window without any structural alteration thereto.

The lock according to this invention consists of a tongue or bolt which is connected by means of two round bars to a flat cross bar to which again are attached two soft iron cores. These practically form the armature. The tongue or bolt in its normal position is always kept shot by means of two springs and being wedge-shaped on one side requires no direct action in order to close it. Owing to the construction of the lock, however, the tongue or bolt cannot be withdrawn into its open position without the introduction of an electric current through an electro-magnet which is provided in the lock. On the electric current being applied the magnets become energised and attract the armature, so withdrawing the tongue or bolt. The requisite electric current may be supplied either from a battery or a main where the latter is available.

When used in a passenger train the current required to actuate the lock may be supplied through a switch in the guard's van connected by wires to a battery or generator so that it becomes impracticable for any unauthorised person to open the door whether the train is in motion or not. If desired, a switch may also be provided within control of passengers who may wish to open the door in case of emergency.

In the case of goods trains or in the case of other doors or windows where a main is not available, the lock may be operated by an electric current from a battery by the insertion of a plug.

The advantages gained by this invention are, its simplicity of construction, action and non-liability to get out of order. Added to these is the extremely cheap cost of production.

The present invention differs from the known locks in that whereas the tongue or bolt in locks heretofore proposed is quite distinct and separate from the body of the lock; in this invention the tongue or bolt forms an integral and inseparable part of the lock itself.

The invention is shown in the annexed drawings Figures 1 and 2.

Figure 1 represents the lock with the cover plate removed and the interior mechanism exposed.

Figure 2 is an end view of the casing viewed from below.

Referring to Figure 1, the tongue or bolt *a* projects from the casing and is connected by means of two round bars *b b* to the flat cross bar *c*. To this cross bar *c* are attached two soft iron cores *d d* which enter freely into the wound bobbins *e e* and move within them with a range corresponding with the depth of the tongue *a*. Spiral springs *h h* on the bars *b b* hold the tongue *a* in its locked position. Plate *i* which rests against the casing holds the springs *h h* in position.

[*Price* 1/-]

The bobbins *e e* are double wound and the extremities of the windings are connected crosswise as shown by the small metallic bars *j j* which are held in an ordinary insulated plug (not shown).

The tongue *a* in its normal position is always kept shot automatically by means of the two springs *h h*, and being wedge-shaped on one side locks itself automatically if the door is suddenly closed. When the door is shut the only method by which it can be opened is as follows.

An electric current is passed through the windings on the bobbins *e e* which animates the magnets drawing down the cores *d d* into the recesses provided for them in the bobbins *e e*. The cores *d d* being attached to the flat cross bar *c* and round bars *b b* to the tongue *a*, tongue *a* is thus drawn into the casing and the door can then be opened.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An electromagnetically operated lock comprising a tongue or bolt forming an integral and inseparable part of the lock itself.

2. A lock as claimed in Claim 1, comprising two round bars for connecting the tongue or bolt to the electro-magnet.

3. A lock as claimed in Claims 1 and 2, comprising a flat cross bar to which the two round bars are connected.

4. A lock as claimed in Claims 1 to 3, comprising two cores attached to the flat cross bar.

5. The electromagnetic lock substantially as described or substantially as illustrated in the accompanying drawings.

Dated this 16th day of March, 1922.

BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London, E.C. 1,
Chartered Patent Agents.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1923

177,176 COMPLETE SPECIFICATION 1 SHEET

Fig. 1.

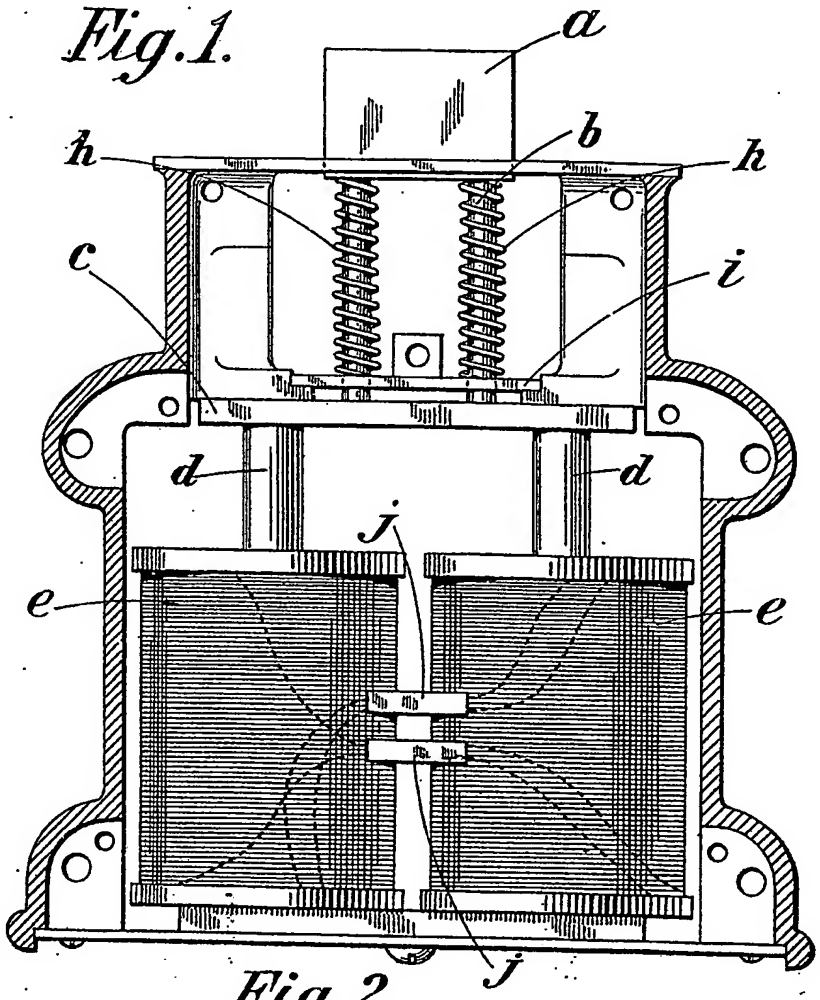
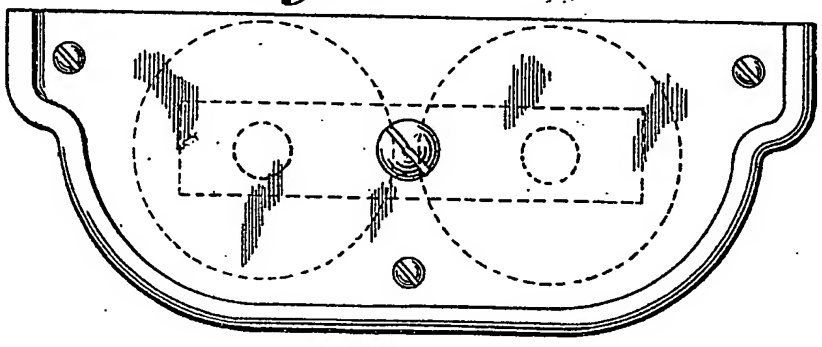


Fig. 2.



Malby & Sons, Photo-Litho